

REMARKS

The sole objection remaining in this case is based on a contention that claims 6 and 16 fail to comply with the requirements of 35 U.S.C. § 112. In particular, the Examiner contends that these claims do not meet the written description requirement because they contain subject matter not described in the specification in a manner to convey to one skilled in this art that applicant had possession of the claimed invention. The Examiner particularly contends that there is no support for the claim limitation requiring that chemical treatment be carried out "substantially without any biological digestion of said unconverted organic material" in the chemical treatment unit. The Examiner contends that, to the contrary, one would expect that biological reaction of unconverted organics would continue in the chemical treatment tank because viable biosolids are transferred along with unconverted organics thereto, and that an oxidation agent (namely, oxygen) is added thereto. The Examiner also contends that the mere fact that chemical reactions take place does not necessarily mean that biological reactions do not also take place, citing Tsumura therefor. The Examiner further contends that the requirement in claim 16 that the ORP value be greater than 0 mV also does not prohibit further substantial biological reaction from occurring. The Examiner cites Coleman (FIG. 2 and lines 35-50) in support of the allegation that a positive ORP and further biological reaction are not mutually exclusive. This rejection is respectfully traversed in view of the above amendments and arguments and for the reasons set forth hereinafter.

Applicant initially submits that the Examiner's position with respect to the compliance of claims 6 and 16 with the requirements of § 112 is incorrect. In addition, however, a further independent claim has been added in this amendment, which includes limitations which are unequivocally supported by

the present specification. Applicant believes that both of these independent claims not only comply with § 112, but are fully patentable over the prior art, and reconsideration and allowance of this case is therefore respectfully solicited.

The Examiner's position with respect to the requirements of § 112 can be shown to be clearly incorrect when one reads the entire specification and appreciates the nature of this invention. While the initially filed claims emphasized the incorporation of a step in which a mixture of biosolids and unconverted organic materials was contacted with an oxidizing agent in the chemical treatment unit, the nature and substance of that step and its incorporation into the overall process of this claimed invention makes it clear that this step must, in fact, be substantially free of any biological reactions.

One important element of the present invention includes monitoring the ORP values in the chemical treatment unit and then adjusting the concentration of the oxidizing agent in order to maintain that ORP level and convert the mixture to a conditioned effluent, which is then returned to the biological reactor therein. The specification goes on to emphasize the nature of the conditions which must be present in the chemical treatment unit. As is thus spelled out, for example, beginning on pages 14 and 15 of the specification, the conditions in the chemical treatment unit, including neutral pH, relatively high temperatures and pressures, and the like, are intended to "convert the cellular material and unreacted organics in the biosolids to more soluble forms" which are thus more readily biodegradable in themselves. The emphasis on the solubilization of the cellular materials, namely the biosolids from the biological reactor initially claimed herein, thus makes it abundantly clear that the objective of the chemical treatment process hereof is to rely on chemical conversion and to minimize, if not entirely eliminate, any biological conversion

therein. Anyone of ordinary skill in this art would immediately recognize that solubilization of the biosolids or cellular materials is highly detrimental to their conduct of any biological activity. Indeed, such solubilization acts to destroy these biological materials. The fact that substantially no biological reaction can possibly occur in applicant's claimed treatment unit is further confirmed by the very conditions described in the specification for that chemical treatment unit. These conditions are, again, clearly antithetical to the conduct of any biological reaction. Even the Schwabegger *et al.* reference relied upon by the Examiner notes that the electrolysis used in that patent (for the sole purpose of phosphate separation) must be carried out at a temperature which is not too high in order not to destroy the bacteria present therein. (Schwabegger *et al.* at column 2, lines 50-53.) This can once again be contrasted with the conditions referred to above for conduct of applicant's chemical treatment unit, including the elevated temperatures which Schwabegger *et al.* specifically warn against as being destructive of these bacteria.

In addition to amended claim 16, reference is made to newly added claim 17, which specifically requires that the ORP value in the chemical treatment unit in this embodiment be maintained to a level of greater than 200 mV. In this case, even the Coleman *et al.* reference referred to by the Examiner recognizes that no aerobic or biological reaction can occur at such conditions (see, FIG. 2 and the discussion at column 3, lines 35 *et seq.*), which are once again antithetical to the conduct of any such biological reactions.

Specifically referring to the Coleman *et al.* disclosure, it is noted that in the cyclic operation of Coleman *et al.*, the use of increased ORP values is indicative of the anoxic cycle thereof, in which no biological reaction is

occurring. This cycle is described by this patentee for the assimilation of BOD using nitrate in the absence of oxygen.

It is therefore respectfully submitted that all of the claims now presented in this application clearly possess the requisite novelty, utility and unobviousness to warrant their immediate allowance, and such action is therefore respectfully solicited. If, however, for any reason the Examiner still does not believe that such action can be taken at this time, it is respectfully requested that he telephone applicant's attorney at (908) 654-5000 in order to overcome any further objections the Examiner might have to the allowance of these claims.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

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Respectfully submitted,

By 

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